SUPPORTING INFORMATION

OXIDATIVE DISSOLUTION OF CHROMIUM(III) HYDROXIDE AT pH 9, 3 AND 2 WITH PRODUCT INHIBITION AT pH 2

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3 pages (including cover page)
1 figure

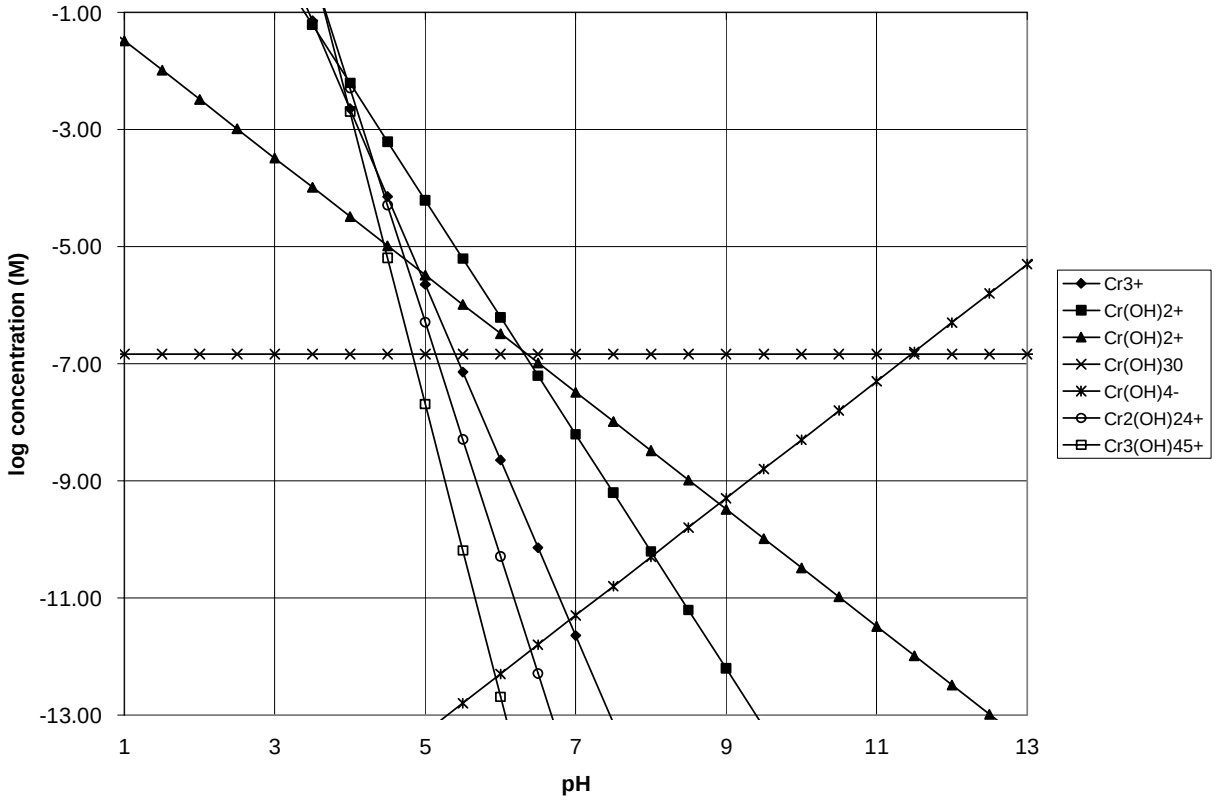

Figure S1. Speciation of Cr(III) in equilibrium with am-$Cr(OH)_3$(s) calculated based on constants from (1). Lower concentrations of dissolved Cr(III) species would be expected in the presence of Fe(III) due to the lower solubility of mixed Cr(III)-Fe(III) oxyhydroxides (2). As discussed by Rai et al. (3) and Rao et al. (4), oligomerization of Cr(III) is negligible below pH 2.7 even at a total Cr(III) concentration of 0.05 M.

Literature cited

(1) Ball, J. W.; Nordstrom, D. K., Critical evaluation and selection of standard state thermodynamic properties for chromium metal and its aqueous ions, hydroloysis species, oxides, and hydroxides. *J. Chem. Eng. Data* **1998**, *43*, 895-918.

(2) Sass, B. M.; Rai, D., Solubility of Amorphous Chromium(III)-Iron(III) Hydroxide Solid-Solutions. *Inorg. Chem.* **1987**, *26*, 2228-2232.

(3) Rai, D.; Sass, B. M.; Moore, D. A., Chromium(III) Hydrolysis Constants and Solubility of Chromium(III) Hydroxide. *Inorg. Chem.* **1987**, *26*, 345-349.

(4) Rao, L. F.; Zhang, Z. C.; Friese, J. I.; Ritherdon, B.; Clark, S. B.; Hess, N. J.; Rai, D., Oligomerization of chromium(III) and its impact on the oxidation of chromium(III) by hydrogen peroxide in alkaline solutions. *J. Chem. Soc.-Dalton Trans.* **2002**, 267-274.